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Degrees of Medicalization: The Case of Infertility Health-Seeking

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Abstract

We examine responses to infertility among a sample of 2,361 women with infertility from the National Survey of Fertility Barriers. Latent class analysis uncovered seven latent classes of behavioral response which can be arranged in a rough continuum from least medicalized to most medicalized response. We then aggregated these seven categories into three schemas representing various degrees of medicalization. Women in each class combine treatment-seeking, knowledge-seeking, socio-emotional support seeking, and non-medical solution-seeking strategies. Even women pursuing the greatest degree of medicalization in their health-seeking (e.g., fertility treatments, assisted reproduction) made use of a variety of medical and non-medical health-seeking resources.

Introduction

As medicalization has increased in scope (Conrad 2007), the lay public has accepted medicine as providing solutions to an ever-widening array of problems (Pescosolido and Olafsdottir 2010). Biomedicine is the dominant approach to health in the US and other modern industrial societies, but many people pursue a variety of health options simultaneously, including seeking advice from social network members, searching for information, and consulting clergy, therapists, and alternative healers while also using the services of biomedical practitioners (Pescosolido 1992). Furthermore, health-seeking is not always aimed exclusively at pursuing a “cure,” but may also be related to understanding a health issue, conceptualizing it in a meaningful context, or obtaining support (Barker 2008; Chrisman 1997; Slauson-Blevins, McQuillan, and Greil 2013).

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Infertility is one example of a recently medicalized condition for which biomedical treatment may exist along with other possible responses. In this article, we look at the range of responses to infertility pursued by a sample of 2,361 women with infertility from the National Survey of Fertility Barriers (NSFB). What options do US women with infertility consider to be viable solutions to their problem of infertility? Are there multiple, alternative health-seeking patterns or a single “hierarchy of resort” (Schwartz 1969) dominating responses to infertility? To answer these questions, we used latent class analysis to identify the most common sets of infertility health-seeking strategies among women across various dimensions: knowledge-seeking, socio-emotional support-seeking, treatment-seeking, and non-medical solution-seeking. We identified seven distinct classes of women in terms of their health-seeking strategies. More broadly, we argue that these show varying degrees of medicalization of the problem of infertility. We also found that even women who pursued a highly bio-medicalized strategy still made use of both alternate medical systems and non-medical resources. Thus, we contribute to the line of research that emphasizes the complex, interactive, and varying nature of medicalization, as opposed to it being a fixed and bounded quality of a condition or behavior (Halfmann 2011).

We bring together lines of research that have developed—at least in part—in isolation from one another and draw on insights from theorizing about help-seeking, health-seeking, medicalization, and the sociology of culture. Our findings are also consistent with other studies showing that people do not passively follow medical orders during the health-seeking process. We disagree, however, with the assertion by Hislop and Arber (2003) that the health-seeking process is one of “personalization”; rather, we show there are strong, underlying patterns, indicating that infertility health-seeking behaviors are guided by shared schemas—that is, those models held in common by a social group or community. We also argue that these shared schemas reflect varying degrees of medicalization of the problem. Of course women also vary in the amount of resources they have to enact desires for medical care (Bell 2016)

Background

Conceptual Framework

In conceptualizing how women respond to infertility, we draw on insights from several theoretical traditions. First we briefly address medicalization theory in medical sociology, emphasizing more recent work that views medicalization as a dynamic and uneven process, occurring at multiple levels. Next, we turn to the health-seeking tradition in anthropology, and focus on the notion of “hierarchies of resort.” Although individuals potentially respond to infertility in personal, idiosyncratic ways, there is more evidence to suggest that health-seeking is guided by shared cultural schemas. We then describe the various strategies people may employ in response to infertility. Finally we ask the empirical question that serves as the focus of our analysis: Do women with infertility pursue unique diverse strategies in responding to infertility or do the move along common trajectories, guided by shared schemas?

Medicalization refers to the process by which certain aspects of life, especially deviant behavior, social problems, and natural bodily processes, come to be regarded and treated as

medical conditions (Conrad 2007; Conrad 1992). When a condition is medicalized, medical professionals assume authority over defining and interpreting the condition, control access to treatment, select treatment regimens, and monitor compliance. Medicalization scholarship has existed since at least the 1970s (Conrad 2005), but more recent work has critiqued earlier research for being too static, uniform, and universalizing --depicting medicalization as a more totalizing and unidirectional process than it really is (Ballard and Elston 2005; Halfmann 2012).

Indeed, much early research also equated medicalization with the dominance of the medical profession, or “medical imperialism”, suggesting that medicalization was being foisted upon a “docile lay populace” against their will (Ballard and Elston 2005). A common theme in more recent work, however, is that people are not passive subjects but active agents, who selectively embrace the aspects of medicalization they deem appropriate (Ballard and Elston 2005; Lock 2004; Williams and Calnan 1996) and sometimes even lobby to have a condition recognized as legitimately medical (Becker and Nachtigall 1992; Brubaker 2007). Empirical studies also suggest that people are pragmatists rather than purists (Barker 2008; Hayes and Hannold 2007; Hislop and Arber 2003; LaFrance 2007). They use whatever is in their cultural “toolkit” (Swidler 2001) to piece together a solution to a problem.

Infertility research also provides evidence of conceptual movement from passive patient to active consumer. Early works, especially feminist scholarship, questioned whether women were simply submitting to new forms of patriarchal technology and the motherhood imperative by seeking out infertility treatments (see Thompson (2002) for a review). In contrast to this image of the powerless infertile woman/powerful doctor, Becker and Nachtigall (1992) showed how women actively sought out medicalization of their infertility problem. Similarly Greil (2002) argued that many women in his study sought to “work the system” in their favor to “push medical treatment in the direction they want it to go” (p. 103). Thompson (2005) further argued that women achieved “agency through objectification” by knowingly undergoing treatments that would objectify their bodies to achieve their end goal of pregnancy and motherhood. One commonality among these studies is that the samples largely consisted of white, middle class, American women. Greil (2002) noted that infertility had become strongly conceptualized as a biomedical problem for this particular group of women.

Other studies, however, have shown that women of lower socioeconomic status and women of color do not necessarily experience or internalize medicalization to the same extent. For example, Bell’s (2014) work on infertility and social class shows that lower SES women did not as readily embrace pregnancy planning and infertility treatment – many described this approach as “unnatural” and expected to have little control over when a pregnancy might occur for them. In later work, Bell (2016) described lower SES women, men, and women in same sex relationships as being at “the margins” of medicalized infertility compared to those at the center: white, higher SES, heterosexual women. Brubaker’s (2007) study of African American pregnant teens—though not about infertility specifically-- showed that these adolescents both resisted and embraced medicalization during pregnancy and childbirth. Czarnecki (2015) explored how devout and non-devout Catholic women incorporate religiosity and religious denomination to their overall orientation to medicalizing infertility.

Although all of the women in Czarnecki's study initially defined infertility as a medical problem and had sought medical solutions, The "infertility journeys" of devout versus non-devout women, however, differ in terms of which types of treatments were considered acceptable vis-à-vis their religious beliefs. Czarnecki's work shows that women grapple with the degree of medicalization and technological intervention they will engage with rather than simple blanket acceptance of medicalization.

Health-seeking and Hierarchies

Our work is further informed by Chrisman's (1977) holistic approach to understanding "health-seeking behavior," defined as the activities that *lay people* undergo in their attempt to address a health condition. Chrisman's health-seeking model suggests that after identifying a symptom people will make illness-related shifts in their behavior and consult with members of their social network about possible ways to manage a condition. In both developing and industrialized countries, a variety of treatment options exist for health problems (McAlpine and Boyer 2007; Pescosolido 1992). There is evidence that many people simultaneously "wander" between medical systems (MacKian, Berf, and Lovel 2004) or employ multiple health-seeking options -- some of which do not involve medicine at all (Pescosolido et al. 1998; Pescosolido 1992).

To say that people wander between health-seeking options is not to say that they wander aimlessly. Ryan (1998) found that five of the 64 possible behavioral sequences account for the majority of responses to acute illness in a rural village, thus demonstrating that people were making decisions, not randomly or idiosyncratically, but in very organized ways. In a classic article about help-seeking in the Admiralty Islands, Schwartz (1969) described a "hierarchy of resort" that guides people when they seek solutions to health problems; some conditions are seen as western illnesses, for which western curative practices are seen as the first resort, while others are seen as native illness, for which western curative practices are the last resort. In a study of Indian migrants to the Twin Cities, Rao (2006) found that respondents employed a different hierarchy of resort for major illnesses compared to minor illnesses.

From the point of view of contemporary sociology of culture, hierarchies of resort would be regarded as shared schemas (Cerulo 2015; Johnson-Hanks et al. 2011). Schemas are mental shortcuts that organize information in the context of previously stored knowledge structures (Patterson 2014). They serve as "models of" the world as it is experienced in everyday life and "models for" action (Geertz, 1973). Schemas include concepts (such as infertility) and also appropriate actions associated with concepts (such as what to do in order to become pregnant). Schemas can be referred to as shared when they are held in common by a community. Shared schemas are generally learned, not through explicit instruction but by induction based on observed patterns of interaction (Johnson-Hanks et al. 2011) and are maintained through social interaction. Shared schemas, such as hierarchies of resort, are the building blocks of culture in that they set the patterns for social action. Ryan (1998) distinguishes between hierarchies of resort, which refer to "organizing principles," (or schemas) and "patterns of resort," which refer to actual behavior, presumably guided by

schemas. In this article, we use the term “patterns of resort” rather than “hierarchies of resort” because we have measured reported behavior rather than cognitions.

Health-seeking for infertility

Physicians define infertility as lack of conception after 12 months or more of recurrent, unprotected intercourse (American Society for Reproductive Medicine 2008). About 11% of US women of childbearing age reported current symptoms that qualified them as having “impaired fecundity” in 2006–2010 (Chandra, Copen, and Stephen 2013), and a study using the NSFB revealed that about 47% of US women had *ever* met criteria for infertility at some point during their reproductive years (Johnson et al. 2011). Less than half of women meeting the medical definition of infertility receive medical services for infertility (Chandra, Copen, and Stephen 2014).

Evidence exists that women’s responses to infertility are at least medically infused if not fully medicalized. Van Balen, Verdurmen, and Ketting (1997) found that medical help-seeking appeared to be the “natural choice” for responding to infertility among Dutch couples. They also remarked that this choice might be less “natural” in contexts where medical treatments for infertility, and healthcare more broadly, were less accessible to the general population. A study of a sample of Midwestern US women found that the vast majority of women who received treatment combined contact with medical professionals with other health-seeking activities (e.g. consulting a minister, attending a support group, using alternative therapies) (Greil and McQuillan 2004).

Drawing on this prior research and connecting this to the available measures in our dataset below (NSFB), we conceptualize infertility health-seeking behavior in terms of four response types: 1) knowledge-seeking, 2) socio-emotional support-seeking, 3) treatment-seeking, and 4) non-medical solution-seeking. Health-seeking behaviors can also be classified along a second dimension; they can be either self-oriented (e.g., individual prayer) or interactive (e.g. talking to another person about the problem). These different sets of categories provide a heuristic to identify and conceptually organize the range of available health-seeking strategies.

Knowledge-seeking entails gathering information about one’s condition to increase personal understanding. Some might also engage in knowledge-seeking to select or improve compliance with a course of treatment. This includes reading books and articles, accessing information online, or reaching out to a group/organization for information. Although their work is somewhat dated now, even in 2003 Haagen et al. found that 66% of couples attending a fertility clinic who had Internet access were using the Internet for infertility-related activities. The majority (72%) sought information, including information on the causes of infertility, information to evaluate clinics, or information on alternative treatments (Haagen et al. 2003).

Socio-emotional support-seeking involves taking action to improve personal coping. This includes such actions as prayer, therapy and religious counseling, as well as talking to family or others about their condition to seek advice/support. Prayer figures high in this strategy because it is more easily engaged in compared to other actions. A US study found that 64%

of people who had experienced moderate to severe pain in the past two weeks reported praying; the great majority of these also made use of medical services (Shi et al. 2007).

Treatment-seeking refers to behavior that involves considering, initiating, or continuing interaction with a health care professional. This includes both biomedical treatment and complementary and alternative medicine (CAM). Despite the dominance of biomedicine in the US, CAM is fairly widely used. For instance, Wang et al. (2005) found that 41% of those who had a medically treatable health problem, had received services from a medical, mental health, or Complementary and Alternative Medicine (CAM) practitioner (Wang et al. 2005). Studies of CAM also find that many people engage in a variety of health practices simultaneously (Harris and Rees 2000). Finally, some biomedical technologies, such as ovulation predictor kits (OPKs), have become accessible as over-the-counter options but do not require consulting with a medical practitioner. We include OPKs as a type of self-oriented, treatment-seeking that still fits with a biomedical understanding of the problem, relying on technological assessments.

Non-medical solution-seeking strategies refer to alternatives to medical care in response to health issues; in the case of infertility adoption is an obvious strategy. Historically, medical treatments to assist pregnancy transformed the social condition of involuntary childlessness that had often been resolved with a social solution into a medical problem. A large number of Americans report that they have considered adopting a child (Chandra et al. 1999), but very few actually adopt (Park and Wonch Hill 2013; Van Laningham, Scheuble and Johnson 2012). We account for both considering and pursuing adoption as self-oriented versus interactive (i.e., reaching out to start the process) versions of responses to infertility.

Statement of the Problem

What options do US women with infertility consider to be viable solutions to their problem of infertility? Are there multiple, alternative health-seeking patterns or a single “hierarchy of resort” (Schwartz 1969) dominating responses to infertility? Below, we use latent class analysis—an inductive statistical technique—to reveal the number of patterns of infertility health-seeking. How do we reconcile the disparate understandings in prior work that infertility is a highly medicalized condition, yet less than half of women with infertility seek medical help? Using survey data from a large population sample of women with infertility, we show that a uniform conceptual emphasis on infertility as medicalized obscures the more complex patterns of medical and non-medical behaviors that women engage in. We suggest that there are different degrees of medicalization of infertility, as evidenced by women’s health-seeking patterns. Furthermore, we show that even women who appear to have strongly internalized a bio-medical understanding of infertility seek out alternate medical systems and pursue non-medical actions.

Method

Participants

We used the NSFB, a random-digit-dialing telephone survey designed to assess social and health factors related to reproductive choices and fertility among US women. The Eunice

Kennedy Shriver National Institute of Child Health and Human Development provided funding. The surveys were conducted at Pennsylvania State University and the University of Nebraska; both Institutional Review Boards the study. To ensure sufficient numbers of cases for subgroup analyses the project over-sampled Census central office codes with a high Black or Hispanic populations and women who have experienced infertility and who desire additional children.

The same interviewer training material and interviewer guides were used at both university survey research organizations. The survey was long (potentially taking over 45 minutes to complete); therefore, it was shortened to an average of 35 minutes by randomly assigning participants to two-thirds of the items of each scale. This “planned missing” design provided a way to incorporate measures of all of the necessary theoretical concepts while minimizing respondent burden. This type of missing data fulfills the “missing completely at random” (MCAR) assumption and does not bias results (Allison 2002). We use the mean of available scale items in the analyses. The response rate for the screener is 53.7%, typical for telephone surveys conducted in recent years (McCarty et al. 2006). Methodological information, including the methodology report, introductory letters, interview schedules, interviewer guides, data imputation procedures, and a detailed description of the planned missing design can be accessed at: <https://www.icpsr.umich.edu/icpsrweb/DSDR/studies/36902#bibtite>.

Between September 2004 and December 2006, 4,796 women ages 25 to 45 completed interviews. The analytical sample for this paper consists of 2,361 women whose responses to a variety of questions indicate that they have ever experienced an infertility episode, defined as any period of 12 months or greater during which a woman had regular intercourse and was either trying to conceive or was “okay either way” about getting pregnant but did not experience conception. Women met the criteria for infertility if they answered yes to either of the following questions: (1) “Was there ever a time when you were *trying* to get pregnant but did not conceive within 12 months?” or (2) “Was there ever a time when you regularly had sex without using birth control for a year or more without getting pregnant?” or if they reported having a pregnancy after a period of at least 12 months during which they were not breastfeeding (which makes conception less likely) and they were either *trying* to become pregnant or said they were “okay either way”. Thus, our sample includes both the infertile with intent and the infertile without intent. The sample may also include some women who fit medical criteria even though it is their partners who have the medical condition.

Measures

Responses to Infertility.—Respondents were asked a series of questions about other possible responses to infertility. To measure *treatment-seeking responses*, we constructed five measures of medical services utilization for infertility out of a series of questions about this topic: (1) considered treatment; (2) talked to a doctor; (3) had tests; (4) had treatment; and (5) had Assisted Reproductive Technology (ART). Each step in the treatment process entails completion of the previous steps. We also included utilization of CAM and purchasing an over-the-counter OPK under treatment oriented strategies. Respondents were asked: “When you were trying to decide whether to go to a doctor and what medical options to pursue; “did you pursue any alternative medical systems such as homeopathic or

naturopathic medicine or Chinese medicine, such as acupuncture?” Responses were coded as 1 for yes and 0 for no. Respondents also asked: “Did you ever purchase an over-the-counter ovulation predictor kit (OPK) to help you time sexual intercourse to increase your likelihood of getting pregnant?” For the purposes of this study, we consider this to be a treatment-seeking response because it entails use of a biomedical technology which has become accessible to the public as an over-the-counter option.

We included several measures of *knowledge-seeking strategies*. Respondents were asked the following: “We’re interested in approaches people may have taken to educate themselves about fertility. Here are things people sometimes do to get information about fertility and pregnancy. Some people have done these things, but others have not. Please tell me if you have ever done the following: Specific items included: “Read articles on getting pregnant in popular magazines?”, “Read articles on getting pregnant in journals?”, “Read a book about getting pregnant?”, “Contacted a support group or reproductive health organization for information about getting pregnant?”, and “Looked for information about getting pregnant on the Internet?”. Because of the wording of the support group question, we classified it as a knowledge-oriented strategy.

Socio-emotional support-seeking strategies are aimed at coping with infertility and the treatment process. Respondents were asked: “When you were trying to decide whether to go to a doctor and what medical options to pursue, Did you pray about this decision?”, “Did you consult a minister or other spiritual leader?”, “Did you consult a therapist or other mental health professional? Responses were coded as 1 for yes and 0 for no. Respondents were also asked: “Did you talk about your concern with family or friends? Would you say never, seldom, occasionally, or often?” and “Did you discuss getting pregnant with others who had experienced a similar situation? Would you say never, seldom, occasionally, or often?” Responses were coded as 1 for occasionally or often and 0 for never or rarely.

We included four measures to tap into *non-medical solution-seeking* via considering or pursuing adoption. Respondents were asked a series of questions about adoption: “Have you ever considered adopting a child?”, “Have you ever legally adopted a child?”, “Are you currently in the process of adopting a child?”, and “Are you considering adopting a child at the present time?” Responses were coded as 1 for yes and 0 for no.

Independent variables.—For the sake of brevity, the independent variables used for the logistic regression analysis are presented in Table 1.

Results

Latent Class Analysis

Descriptive statistics for the variables are presented in Table 2. These statistics show that some activities are much more common than others. The top five behaviors in the whole sample include: considered adoption (60.06%), considered treatment (41.08%), prayed (35.87%), talked to a doctor (31.60%), and talked to family (27.45%). Notably, these “top five” strategies are drawn from three of the four response categories (socio-emotional support-seeking, treatment-seeking, and non-medical solution-seeking), indicating that

women combine various strategies in responding to infertility. The overall picture, however, may gloss over more fine-grained response patterns for subgroups of women. Our latent class analysis, below, clarifies and exposes different sub-patterns in the data.

To help find patterns out of the many possible responses (20 by 20 = 400 possible cells), we conducted latent class analysis (LCA) in Mplus. LCA is a statistical method for identifying unmeasured class membership among subjects using observed variables, treating deviations from the classes as “error.” LCA differs from factor analysis in that it uncovers groups of cases with similar features rather than groups of variables the cluster together.

Using the Vuong-Lo-Mendell-Rubin Likelihood Ratio Test (Vuong et al. 1989) and the Lo-Mendell-Rubin (Lo, Mendell, and Rubin 2001) Adjusted Likelihood Ratio Test, we determined that a seven class solution was optimal. Adding classes did not improve model fit of the model to the data, and deleting classes resulted in a significantly worse fit. The seven classes classify all women into mutually exclusive classes ranging from those who do little in response to infertility to those who did almost everything (“no holds barred”). We provide brief descriptions of each of the latent classes in Table 3a, the conditional probabilities for engaging in an activity for member of each latent class in Table 3b, and a graph illustrating the conditional probabilities by latent class for the activities in Figure 1. Figure 1 is a graphical representation of the data in Table 3a. In our assessment of patterns within these seven classes, we also see utility in thinking about broader categories and relationships across the classes. In this vein, we have identified these classes as approximating three different health-seeking trajectories or shared schemas: non-medicalized, medically infused, and medicalized. Evidence for the three groups become apparent in the types of actions that women do, or do not, pursue (discussed immediately below), as well as differences in the characteristics of women who inhabit these classes (discussed in the next section).

Class 1 (n=1,340) was the largest subgroup and included more than half of the women (56.76%). Women in this class had the smallest conditional probabilities for most actions (Table 3b, Figure 1), and a limited range of responses, so we describe this as the “limited response” group. Women in this group engaged only in self-oriented responses. Within this group, the highest response probabilities were for knowledge-seeking (reading articles and books), prayer, and considering adoption. Notably, women in this group had the smallest probability of even considering medical treatment compared to all other groups (.04). It is not surprising that this is the largest group given that other large nationally representative samples find that less than half of women with infertility receive medical services (Chandra et al. 2014). The low probability of even considering medical treatment suggests that either 1) women in this group did not necessarily view their fertility problems as a medical condition, or 2) treatment was simply not in the range of possible options for them.

We described Class 2 (n=182, 9.5%) as the “consider and discuss” group. This group had a combination of both self-oriented and interactive responses to infertility. Like the women in class 1, they prayed and considered adoption. In contrast to class 1, however, these women had lower probabilities of engaging in knowledge-seeking responses (.01 to .13) but much

higher probabilities of socio-emotional support seeking (prayer, talking to family and others), and considering medical treatment.

Class 3 (n=93) was the smallest class (3.94%) in the sample. Women in class 3 combine behaviors from Classes 1 and 2. Like women in Class 1, they engaged in self-oriented responses such as knowledge-seeking, prayer, and considering adoption. Like the women in Class 2, however, they also had a higher probability of considering medical treatment (.62). We named Class 3 the “consider and self-inform” group.

Class 4 (n=119; 5.04%) represented a distinct departure from class 1–3 in that most of the top responses were concentrated within treatment-seeking behaviors (considering, talking to a doctor, having tests). Class 4, however, also had high probabilities of considering adoption and talking with family. We describe these women as the “testers” in that they have made the move from considering treatment, to talking to a doctor and have a high probability of continuing on to have diagnostic testing (.39). The “tester” class does not fit the response progression continuum that the other six classes fit. Although women in this class were less likely to engage in knowledge-seeking and social support-seeking, we placed them fourth because they did move further in terms of treatment-seeking.

We describe Class 5 (n=247; 10.49%) women as “pursuing options.” In some ways they were similar to the “testers” group because they have made their way into the doctor’s office and had a higher probability of receiving diagnostic tests (.58). These women, however, also engaged in a wider range of socio-emotional support seeking responses, in knowledge-seeking, and had a higher probability of considering adoption (.76).

We refer to women in Class 6 (n=216; 9.15%) as the “banking on treatment” group because most of their responses were concentrated in treatment-seeking. All women in the banking on treatment group had considered treatment, talked to a doctor, had diagnostic tests, and went on for treatment. Women in this group also had the second highest probability of pursuing ART (.11). Treatment was not their only focus, however, because women in the “banking on treatment” group also had a high probability of engaging in prayer (.75) relative to other possible responses.

Finally, women in Class 7 (n=164; 6.95%) were the most likely to pursue all possible responses. Therefore, we describe this group as “no holds barred”. Women in this group had the highest probability of all classes on 17 of the 20 responses. They engaged in knowledge-seeking, socio-emotional support-seeking, treatment-seeking, and non-medical solution-seeking. We interpret this group as an ‘all out’ strategy to find a solution to infertility by any means possible. They also clearly “wander” between systems (MacKian, Berf, and Lovel 2004) by seeking both biomedical and alternative medical treatments, as well as seeking both medical and non-medical solutions.

Exploring Class Membership

In this section, we explore class membership in greater detail to understand differences among women in each class. The seven classes show distinctly patterned behaviors, but they can also be substantively classified into three broader trajectories of non-medicalized,

medically infused, and medicalized. To further elucidate class membership, we draw comparisons here between classes within these different trajectories. As noted above, Class 1 (“limited response”) shows little to no degree of viewing their infertility episode as a medical problem, evidenced by their limited action across all possible Health-seeking responses, and especially for medically oriented responses. The characteristics of these women provide further support here, especially contrasted to Class 7 (“no holds barred”). Women in Class 1 were much less likely to interpret their infertility as a lifecourse disruption, indicated by the percentage experiencing primary infertility (17.7% v. 79.3% in Class 7) and intent to get pregnant (27% v. 98.8% in Class 7). Women in class 1 also experienced their infertility episode in the more distant past, especially comparing those who had an episode, more than 10 years prior to the survey (more than half v. 26% of women in Class 7). Women in Class 1 also had lower resources to seek out medical solutions, especially regarding health insurance (62.1% v. 87.8% in Class 7). Women in Class 1 also had a higher percentage of women of color—44.6% were non-Hispanic white compared to 70.1% of women in Class 7. Therefore, the social status characteristics of women in class 1 (fewer resources, women of color) also do not fit the stereotypes of women who seek medical care for infertility (Bell 2016). Finally, another major difference was that women in Class 1 had substantially less social influence from partners, family, and friends to seek out medical treatment. Only 1.7% reported a partner encouraging them to seek medical help versus 68.9% in Class 7. Overall, the women in the “Limited Response” group had fewer cues to interpret and respond to their infertility episode as a medical problem.

Classes 2 and 3 make up the second broad health-seeking trajectory: medically infused schemas. Women in these classes were roughly between Class 1 and the medicalized schemas groups in terms of a variety of characteristics. For instance, they had higher percentages of primary infertility (36.6%, 44.5%) compared to Class 1 (17.7%), but lower than women in the medicalized classes (ranging 38.7% to 79.3%). Women in Classes 2 and 3 also had substantially higher percentages of partners encouraging medical treatment (16.1%, 18.7%) compared to Class 1 (1.7%), but lower in comparison to women in the medicalized classes (ranging 39.5% to 68.9%). Some of the attitudinal measures also differ in meaningful ways. Women in Class 3 (“consider and self-inform”) had the highest average scores on ethical concerns about infertility treatment (1.72), as well as the highest average scores on religiosity (0.22). Women in Class 2 had the lowest average religiosity scores (−.05), but also the lowest average scores on faith in medical science (3.29). We interpret these scores as indicating that women in this class were hesitant to pursue medical responses and had not fully accepted medicine as the solution to their infertility. In addition, the findings reported above that women in both of these classes were likely to consider treatment for their infertility, but had not yet talked to a physician about it (Table 3b).

Classes 4 through 7 make up the ‘medicalized’ trajectory. In terms of their health-seeking responses (described above), these women have all sought out biomedical advice or solutions for their infertility. Within this trajectory, however, Class 7 (“no holds barred”) stands distinct in terms of type and degree health-seeking responses, as well as characteristics of the women themselves. These women most clearly epitomize the public profile of American women with infertility: most had primary infertility (79.3%), strongly intended to have a child (98.8%), were non-Hispanic white women (70.1%), and had

resources such as private health insurance to seek out medical solutions (87.8%). Women in Class 7 also have the strongest social cues from people in their lives to seek out medical treatment. In terms of attitudes, they also have the highest average score for faith in medical science (3.44) and the second lowest average score for ethical concerns about infertility treatments (1.45).

Conclusion

In this article, we examined a wide range of responses to infertility and avenues for pursuing motherhood, including treatment-seeking, knowledge-seeking, socio-emotional support seeking, and non-medical solution-seeking strategies. Using latent class analysis, we were able to classify women as belonging to seven classes which can be arranged in a rough progression in terms of the type and degree of responses from the least medicalized “limited response” group to the most medicalized “no holds barred” group. We then aggregated these seven categories into three schemas representing various degrees of medicalization: non-medicalized, medically infused, and medicalized. These schemas emerge in the types of actions that women do, or do not, pursue, as well as the differences in the women who inhabit these classes. In this vein, we found compelling evidence for varying degrees of medicalization of infertility, as opposed to the more totalizing narrative that infertility is a medicalized condition in the contemporary US. Thus, we contribute to more recent scholarship on both medicalization and infertility which points to shifting, uneven, and unequally experienced processes (Ballard and Elston 2005; Bell 2014, 2016; Czarnecki 2015; Halfmann 2012).

It is interesting that women in all classes pursue several strategies; many incorporated treatment-seeking strategies, to a varying degree, with other strategies into a more holistic approach to addressing infertility (Hislop and Arber 2013). As Table 3b showed above, women’s probability of considering medical treatment ranges substantially from .04 to 1 across the different groups. For some women medical treatment represents a major part of their overall health-seeking strategy; for others, it is a more moderate or passing consideration relative to other possible options. Perhaps most compelling is the pattern of responses for Class 7 (“no holds barred”). Even as these women appear to have been highly committed to medical solutions (tests, treatment, ART), they were also seeking out alternative medicine, and considering/pursuing adoption as means to solve their infertility problem. Our findings also suggest that the same personal and social characteristics (e.g. age, primary infertility, encouragement from others) that predict which women seek medical treatment also predict general degree of medicalization of women’s health-seeking schema.

An ideal dataset would include more details about the order in which individual women pursued activities to conceive, would follow women over time, and would include detailed fertility information on male partners (for those that have them). Unfortunately this survey does not have a way to identify the order in which individual women pursued various responses to infertility. Even if the survey had asked for more details about dates or ordering, it is unlikely that women could accurately recall what they did when. Additionally, we would prefer longitudinal data to ascertain whether attitudes such as ethical concerns about infertility treatments preceded or followed getting treatment. Because many women respond

to infertility within heterosexual unions, it would be helpful to have more information about male partners (Johnson and Johnson 2009). This would allow us to explore the extent to which health-seeking patterns are gendered. This data is over ten years old, and we might expect responses would be different if the study were conducted now. For example, we would expect a much larger proportion of women to seek information on the Internet. Finally, our data set did not permit us to investigate whether the patterns of resort we describe are related to one's sense of efficacy or control over one's responses to health issues.

Despite less than ideal data, the results provide evidence of the utility of treating medicalization as a continuum and the usefulness of integrating medicalization research with health-seeking research. The health-seeking tradition augments medical- help-seeking research by drawing attention to data indicating that not all help-seeking is "medical" in the strictest sense of the word. Additionally, bringing concepts such as schemas from the sociology of culture into explorations of medicalization helps draw attention to the culturally patterned nature of responses to health issues. It is striking that most women engage in similar kinds of responses, even if they vary in degree of medicalization.

This research shows how social structures (e.g. accessibility of health insurance that covers infertility treatment), cultural scripts (e.g. who is expected to seek medical help for infertility), and individual agency (e.g. selecting options from cultural alternatives within social structures) shape patterns of response to a health-related issue. Do these findings only apply to infertility, or do other non-life threatening health related conditions (e.g. acne, baldness, overweight) have similar patterns of response? We hope that future research explores this question. Future research should address the generalizability of the findings we have reported, as well as address how individuals come to develop different health-seeking strategies. Assessing the full spectrum of responses to health concerns sheds light on how individuals understand health conditions, on barriers to medical care, and on the social meanings of health and illness. Medical sociologists would do well not to limit their studies to behavior oriented toward medical institutions. Rather, they should examine the full range of possible responses to health issues and incorporate insights from health-seeking research.

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Figure 1:
Conditional Probabilities for 20 Pursuing Responses by Latent Class Membership (Color Width indicates size of the associated conditional probability)

Table 1.

Independent variables used in the analysis.

Name	Description
Primary infertility	Constructed from women's pregnancy histories. 1 = no pregnancies at time of first infertility episode.
Infertile with intent	1="yes" to the question: "Was there ever a time when you were <i>trying</i> to get pregnant but did not conceive within 12 months?" or if reported having a pregnancy after a period of at least 12 months during which <i>trying</i> to become pregnant.
Wants a(nother) child	1="yes" to the question: "Would you, yourself, like to have a(nother) baby?"
Race/Ethnicity	Standard US Census wording. We constructed dummy variables to compare women who identify as Black, Hispanic, or Asian to women who identify as White women. If participants chose more than one category, then they were classified as Hispanic first, then Black, then Asian, then White.
Episode category	Constructed from pregnancy histories. 1=episode within past 5 years. 2=6-10 years. 3=11-15 years. 4=greater than 15 years.
Age	Measured in years.
Family income	Measured in 10k increments.
Education	Measured in years.
Employed	1= full-time or part-time employment, 0= all other categories.
State Coverage	1= respondent's state mandates insurance coverage for infertility treatments, 0=no mandate.
Education	Years of formal schooling.
Private health insurance	"Are you covered by private health insurance, by public health insurance such as Medicaid, or some other kind of health care plan or by no health insurance?" 1= private health insurance, 0=all else.
Important to partner	"It is important to my partner that we have children," 1=strongly agree, 0=all else.
Partner encouraged	"Did your husband/partner strongly encourage, encourage, discourage, or strongly discourage seeking medical help or was it mixed?" 1= strongly encouraged, 0=all else.
Fam/friends encouraged	"Did your family or friends strongly encourage, encourage, discourage, or strongly discourage seeking medical help or was it mixed?" 1= strongly encouraged, 0=all else.
Fam/friends pursue	"Have family/friends pursued medical help to help get pregnant?" 1=yes, 0=no.
Important to parents	"It is important to my parents that I have children", 1=strongly agree, 0=all else.
Fam/friends have kids	"Thinking about your family and friends, would you say that all, most, some, few or none of them have kids?" 1=strongly agree, 0=all else.
Infertility stigma	3-item scale including questions such as "People who can't get pregnant without medical help often feel inadequate." Response categories ranged from (1) strongly agree to (4) strongly disagree. Alpha =.74.
Ethical concerns	Constructed by averaging of responses to six scenarios concerning reproductive technology: (1): insemination with husband's sperm (AIH), (2) insemination with donor sperm (AID), (3) in vitro fertilization (IVF), (4) use of donor eggs, (5) traditional surrogacy, and (6) gestational surrogacy. Each item was measured with three ordered categories: (1) no ethical problem, (2) some ethical problems, or (3) serious ethical problems. Responses included 1=no ethical problem, 2=some ethical problems, 3=serious ethical problems ($\alpha = .70$).
Faith in med	Measured by three questions: 1) "Medical science can be a big help to women who are having trouble getting pregnant;" 2): "Women who have trouble getting pregnant would benefit from consulting a doctor;" 3) "With the medical advances available today, women can wait to have a baby until their late 30s and still have a good chance of trying to have a baby. ($\alpha=.749$).
Religiosity	Measured by four questions: 1) "How often do you attend religious services?" 2) "About how often do you pray?" 3) "How close do you feel to God most of the time?" and 4) "In general, how much would you say your religious beliefs influence your daily life?" The items were normalized and averaged; they form a single factor and have a high reliability ($\alpha = .73$).

Table 2.

Health-seeking responses by type and individual/interactive mode (n = 2361)

Response Type	Individual/Self-Oriented	%	Interactive/Consulting-Oriented	%
Knowledge-seeking	Internet	6.6	Sought info (support group/organization)	6.0
	Read books	23.1		
	Read articles	25.2		
Socio-emotional support-seeking	Prayed	35.9	Talked to therapist	3.9
			Talked to minister	9.2
			Talked to others	23.4
			Talked to fam	27.5
Treatment-seeking	Ovulation predictor kit (otc)	16.1	ART	3.6
	Considered biomedical treatment	41.1	Alternative treatment (CAM)	4.1
			Biomedical treatment	15.6
			Biomedical tests	24.2
			Talked to doctor	31.6
Non-medical solution-seeking	Considering adoption now	10.1	In process adoption	1.7
	Considered adoption	60.1	Ever adopted	4.4

Notes: Response categories are not mutually exclusive. Categories highlighted in gray are top five responses within the analytic sample.

Table 3a.

Latent Class Analysis of responses to infertility.

Class	N	%		Description
Class 1	1,340	56.76	Limited response	All self-oriented responses. Top responses include knowledge-seeking, prayer, considering adoption (now/ever).
Class 2	182	9.5	Consider and discuss	Both self-oriented and interactive responses. Top responses include support-seeking and considering (medical and non-medical) solutions.
Class 3	93	3.94	Consider and self-inform	All self-oriented responses. Top responses include knowledge-seeking, prayer, considering (medical and non-medical) solutions.
Class 4	119	5.04	Testers	Both self-oriented and interactive responses. Top responses include treatment-seeking, considering adoption, and talking with family.
Class 5	247	10.49	Pursuing options	Both self-oriented and interactive responses. Top responses include treatment-seeking, prayer, considering adoption, and reading books.
Class 6	216	9.15	Banking on treatment	Both self-oriented and interactive responses. Top responses include treatment-seeking and prayer.
Class 7	164	6.95	No holds barred	Both self-oriented and interactive responses. Top responses include treatment-seeking, reading, and considering adoption. Highest probability on 17 of the 20 items compared to all other classes.
Total	2,361			

Table 3b:

Conditional Probabilities for 20 Responses by Latent Class Membership

	No Holds Barred	Banking on treatment	Pursuing options	Testers	Consider & Self-inform	Consider & Discuss	Limited response
	n=170 7.20%	n=214 9.10%	n=248 10.50%	n=114 4.80%	n=112 4.70%	n=207 8.80%	n=1297 55%
<i>Knowledge-seeking</i>							
Search Internet	0.19	0.09	0.2	0.06	0.25 *	0.08	0
Read articles	0.89 *	0.46	0.68	0.12	0.85	0.2	0.32
Read books	0.9 *	0.43	0.69	0	0.86	0.13	0.18
Support group	0.45 *	0.07	0.12	0.02	0.16	0.01	0.01
<i>Socio-emotional support-seeking</i>							
Pray	0.87	0.75	0.78	0.7	0.89 *	0.69	0.43
Therapist	0.24 *	0.02	0.09	0.03	0.07	0.06	0.03
Minister	0.34 *	0.18	0.21	0.09	0.26	0.15	0.04
Talk family	0.84 *	0.58	0.63	0.34	0.53	0.58	0.01
Talk others	0.79 *	0.41	0.53	0.16	0.47	0.47	0.02
<i>Treatment-seeking</i>							
OPK	0.72 *	0.4	0.41	0.14	0.15	0.18	0
Consider treatment	1 *	1	1	1	0.62	0.52	0.04
Talk doc	1 *	1	1	1	0	0	0
Tests	1 *	1	0.58	0.39	0	0	0
Treatment	0.9	1	0	0	0	0	0
ART	0.36 *	0.11	0	0	0	0	0
CAM	0.29 *	0.04	0.11	0	0.04	0.04	0
<i>Non-medical solution-seeking</i>							
Consider adopt	0.91 *	0.7	0.76	0.62	0.87	0.59	0.49
Consider adopt now	0.3 *	0.16	0.22	0.05	0.29	0.21	0.13

	No Holds Barred	Banking on treatment	Pursuing options	Testers	Consider & Self-inform	Consider & Discuss	Limited response
	n=170 7.20%	n=214 9.10%	n=248 10.50%	n=114 4.80%	n=112 4.70%	n=207 8.80%	n=1297 55%
Process adopting	0.08*	0.03	0.01	0.03	0.06	0	0.02
Ever adopt	0.18*	0.06	0.04	0.03	0	0.02	0.02

Note: CAM - Complementary and Alternative Medicine; OPK - Ovulation Predictor Kit; ART = Assisted Reproductive Technology Gray highlight = actions within class with probability >.40.

* = highest across classes.

Table 4.

Descriptive Statistics by Class Membership

	Medicallized			Medically Infused		Non-medicallized		Sig.
	No Holds Barred n=164	Banking on Tx n=216	Pursuing Options n=247	Testers n=119	Consider & Self-inform n=93	Consider & Discuss n=182	Limited response n=1340	
	M or %	M or %	M or %	M or %	M or %	M or %	M or %	
Fertility-related								
Primary infertility	79.3	61.6	51.8	38.7	36.6	44.5	17.7	***
Intent	98.8	92.6	81	78.2	71	65.9	27	***
Wants a(nother) child	66.7	43.3	59.8	48.7	64.1	50.8	36.6	***
Episode timing								
Past 5 years	37.4	30.6	34.4	26.3	38	30.8	22.8	***
6-10 years ago	36.2	19.9	25	28.8	22.8	28.6	24.5	*
11-15 years ago	15.3	25.9	20.1	25.4	17.4	19.8	20.9	
15+ years ago	11	23.6	20.5	19.5	21.7	20.9	31.8	***
Demographic								
Race								
Non-Hispanic White	70.1	66.7	58.7	52.9	50.5	55	44.6	***
Black	14	13.4	19.8	17.7	32.3	18.7	29.1	***
Hispanic	9.8	14.8	14.6	27.7	12.9	19.2	21	***
Asian	3.7	2.8	2.8	0	2.2	2.2	1.9	
Age (years)	36.8	37.5	36.3	36.6	35	35.5	35.8	***
Income (Midpoint \$)	147,362	147,141	131,568	91,701	102,688	123,969	114,695	
Education (years)	15.7	14.6	14.8	13.6	14.3	13.9	13.9	***
Employed	67.7	67.6	69.2	72.3	61.3	66.5	68.7	
State Coverage	45.7	42.6	51.4	47.9	44.1	45.1	48.9	
Private health insurance	87.8	82.9	76.5	67.2	54.8	63.7	62.1	***
Social Influence								
Important to partner	55.5	42.6	38.9	30.3	30.1	37.4	25.8	***
Partner encouraged TX	68.9	61.6	44.9	39.5	16.1	18.7	1.7	***

	Medicalized			Medically Infused			Non-medicalized		
	No Holds Barred n=164	Banking on Tx n=216	Pursuing Options n=247	Testers n=119	Consider & Self-inform n=93	Consider & Discuss n=182	Limited response n=1340		
	M or %	M or %	M or %	M or %	M or %	M or %	M or %		Sig.
Family encouraged TX	63.4	50.9	38.5	21	30.1	24.2	0.97		***
Friends, family pursued TX	76.2	58.3	58.3	44.5	52.7	51.7	42.5		***
Parents want grandchild	36	25.5	23.1	20.2	30.1	31.3	22.7		***
Friends, family have kids	87.8	89.8	86.6	79	79.6	83.5	83.1		*
<i>Attitudes</i>									
Perceived infertility stigma	2.84	2.64	2.68	2.62	2.76	2.7	2.69		*
Faith in medical science	3.44	3.41	3.38	3.31	3.31	3.29	3.32		*
Ethical concerns about TX	1.45	1.43	1.61	1.6	1.72	1.52	1.57		***
Religiosity	0.161	0.104	0.013	-0.042	0.217	-0.045	0.095		*

Notes: Chi-sq tests for categorical variables, ANOVA for continuous by categorical.